

pallets. Optimal machine sequencings). Model applicability (Scope of applicability. Stochastic Petri nets. Colored Petri nets). *Chapter 9: Graph Theory*. Basic terminology and notation. The shortest path problem (Problem formulation and solution. PERT-CPM. Inventory management problem). The maximal flow problem (Problem definition. Applications). Conclusion. *Chapter 10: Data Analysis*. Definitions, notation, and basic concepts (Observations. Links between characteristics). Main component analysis (MCA) (Introduction to main component analysis. Mathematical approach. Use of MCA). Clustering analysis (*K*-mean analysis. Hierarchical clustering analysis. Cross-decomposition methods). Conclusion. *Chapter 11: Mathematical Analysis of Automated Systems: Two Examples*. Mathematical modeling and analysis. Transfer line with unreliable machines and transportation system (Stating the problem. The model. Productivity versus number of pallets. Evaluation). Closed-loop conveyor system (Stating the problem. The model. Evaluation). Conclusion.

J.G. Carbonell, ed., *Machine Learning: Paradigms and Methods* (MIT Press, Cambridge, MA, 1989) 394 pages

Introduction: Paradigms for Machine Learning (J.G. Carbonell). *Model of Incremental Concept Formation* (J.H. Gennari, P. Langley and D. Fisher). *Explanation-Based Learning: A Problem Solving Perspective* (S. Minton, J.G. Carbonell, C.A. Knoblock, D.R. Kuokka, O. Etzioni and Y. Gil). *Design by Derivational Analogy: Issues in the Automated Replay of Design Plans* (J. Mostow). *Connectionist Learning Procedures* (G.E. Hinton). *Classifier Systems and Genetic Algorithms* (L.B. Booker, D.E. Goldberg and J.H. Holland). *Data-Driven Approaches to Empirical Discovery* (P. Langley and J.M. Zytkow). *A Theory of the Origins of Human Knowledge* (J.R. Anderson). *Creativity and Learning in a Case-Based Explainer* (R.C. Schank and D.B. Leake).

C.W. Gear, ed., *Computation and Cognition: Proceedings of the First NEC Research Symposium* (SIAM, Philadelphia, PA, 1991) 168 pages

New Opportunities in Multicomputers (H.T. Kung). *Optical Interconnections in Computing* (Joseph W. Goodman). *A View of Computational Learning Theory* (Leslie G. Valiant). *Mappings Between High-Dimensional Representations of Acoustic and Visual Speech Signals* (Terrence J. Sejnowski and Ben P. Yuhas). *Colligation of Coupled Cortical Oscillators by the Collapse of the Distributions of Amplitude-Dependent Characteristic Frequencies* (Walter J. Freeman). *Directions in Natural Language Processing* (Mitchell Marcus). *What Does Theoretical Physics Have to Say About Information Science?* (P.W. Anderson). *Panel Session* (Chairman: Professor Amari).

Richard B. Darst, *Introduction to Linear Programming: Applications and Extensions* (Marcel Dekker, New York, 1991) 353 pages

Chapter 1: Introduction to Systems of Linear Equations (Linear Systems) and Related Properties of Matrices. Linear systems. Row echelon algorithm. Row reduction. Matrix operations. Rank. Identity